

CHAPTER 2

DESIGN POLICIES AND GUIDELINES

2.1 GENERAL DESIGN POLICY INFORMATION

2.1.1 Establishment of Design Policies and Procedures

The authority of the Department has been defined over the years by legislation. The Louisiana Legislature has enacted various state statutes that outline the administrative and technical responsibilities of DOTD. [Louisiana Revised Statutes \(LRS\) 48:35](#) is a key statute pertaining to the establishment of design policies and procedures for the Department and reads, in part:

The Department of Transportation and Development shall adopt minimum safety guidelines with respect to highway and bridge design, construction, and maintenance. These guidelines shall correlate with and, so far as possible, conform to the system then current as approved by the American Association of State Highway and Transportation Officials allowing the flexibilities incorporated therein. Hereafter, the state highway system shall conform to such safety guidelines.

In response, the Department has adopted highway design policies and procedures that conform to the most recent guidelines developed by AASHTO.

2.1.2 Sources of Design Policies and Procedures

The Department uses several sources for the development of design policies and procedures for highway projects. These primary sources are:

- **A Policy on Geometric Design of Highways and Streets**
- **Roadside Design Guide**
- **Highway Capacity Manual (HCM)**
- **Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)**
- **Highway Safety Manual (HSM)**
- [Engineering Directives and Standards Manual \(EDSM\)](#)

These publications form the basis for the design guidelines adopted by the Department. They also guide the Department on policies and procedures related to all facets of highway design and plan development. More detail on each of these publications can be found in Section 1.1.4.

2.2 DESIGN GUIDELINES FOR FREEWAYS, ARTERIALS, COLLECTORS, AND LOCAL ROADS

2.2.1 General Information

The Department has developed and adopted design guidelines that define the critical design elements for each functional system of roadway. For each highway project, the current design guidelines that apply should be obtained from the [DOTD website](#) or the project manager prior to the pre-design.

As shown in the design guidelines, values are given for preferred and acceptable conditions. For all items, the designer should strive to provide the preferred value. If conditions on a project will not allow the use of the preferred value, the acceptable value should be used. The use of a value less than acceptable will require a design exception, as discussed in Section 2.3.

2.2.2 Roadway Classification

Design guidelines have been developed for the different functional systems of roadways. In order to qualify for federal highway funds, FHWA requires that each state categorize the state routes within its jurisdiction by functional classification into one of these systems. FHWA has published [Highway Functional Classification: Concepts, Criteria, and Procedures](#), which guide the Department in this effort. A detailed discussion on the concept of functional classification and the characteristics of the different functional systems can be found in Chapter 1 of the Green Book.

Based on FHWA requirements, the Department has assigned all Louisiana state highways to a functional system. Rural and urban functional systems have been classified separately because of the fundamental differences in their characteristics. The categories of functional systems used by the Department are:

- **Rural and Urban Principal Arterial** (including freeways)
- **Rural and Urban Minor Arterial**
- **Rural and Urban Collector** (major or minor)
- **Rural and Urban Local Road**

2.2.3 Other Project Types

[LRS 48:35](#) allows DOTD to develop guidelines with values less than those given in AASHTO publications for other types of projects where all work is contained within the existing right-of-way. The Department has developed and adopted PRR guidelines for these situations.

If needed, copies of the design guidelines developed for these projects can be obtained from the [DOTD website](#) or the PRR Unit. Any exceptions to the required guidelines should follow the procedures outlined in Section 2.3 for approval.

2.3 EXCEPTIONS TO DESIGN GUIDELINES AND POLICIES

Effort should be made to meet the approved and appropriate DOTD design guidelines for each roadway or bridge project. However, in some cases, this may not be feasible or practical. A project may have certain conditions where the acceptable values provided in the design guidelines cannot be met. On other projects, economic, social, environmental or political considerations may require a modification to the design guidelines. For these situations, a design exception may be appropriate.

Each variance to the design guidelines should be thoroughly studied (including crash data relating to the proposed exception), justified and documented. To request a design exception, a letter is sent to the Chief Engineer asking for his/her consideration and approval, along with the [design exception form](#). The letter should state the exception requested and summarize the justification. If the Chief Engineer approves the exception, the request is forwarded to FHWA for their consideration and approval on full oversight projects or PoDIs.

After the design exception has been approved, it is essential that it be properly recorded. A copy of the approval letter from the Chief Engineer and FHWA (if required) should be included in the project files. Also, a note should be placed on the title sheet and should contain the following information:

- description of the exception
- date the exception was approved
- name of person who approved the exception

Exceptions to other Department policies or the EDSM must be processed in the same manner with final approval obtained from the section head and/or the Chief Engineer.